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Martin G. Linihan

Name

Signature

September 21, 2004

Date of Signature

AF #18
135 eq.
for
rehearing

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of:

Barry C. Muffoletto et al.

Serial No.: 09/628,174

Group: 1775

Filed: May 1, 1997

Examiner: J. McNe

For: METHOD FOR IMPROVING ELECTRICAL CONDUCTIVITY OF
METALS, METAL ALLOYS AND METAL OXIDES

BOARD OF PATENT APPEALS
AND INTERFERENCES

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REQUEST FOR REHEARING UNDER 37 CFR § 1.197(b)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Herewith is appellants' Request for Rehearing in triplicate in response to the Decision on Appeal mailed July 21, 2004. The grounds upon which appellants request rehearing are as follows.

Firstly, the Decision appears to have overlooked application of the In re Luck decision, discussed in both the Appeal Brief and Reply Brief of appellants, to the facts of this case. A copy of the In re Luck decision is included herewith as

Exhibit A for convenience. In Luck the Court did consider the process limitation in the product claim at issue, and for that reason appellants urge that the process limitation should be considered here also. In particular, as set forth in the Opinion on pages 3 and 4 of the attached Luck decision, the Court did consider the process limitation in part d) of claim 1 when it made the statement:

But we do find that the Patent Office has established a prima facie case of obviousness for the product with full weight being given to the process limitation. The Pipkin and Crissey et al references specifically teach the use of an organic solvent. Hence such a solvent is an obvious alternative to the aqueous carrier of Boyd, no criticality having been taught by Boyd for the combination of silane and water.

Thus, in Luck the Court's determination of patentability of the product claim was "with full weight being given to the process limitation." The Court found the prior art of record relating to the subject matter of the process limitation to be determinative in deciding against patentability of the product claim. Here, if the Board were to consider the process limitation in the appealed claims 6 and 7, in a manner similar to what was done by the Court in Luck , the Board could reach no other decision but to find claims 6 and 7 patentable over the art of record. The prior art of record includes no disclosure, teaching or suggestion of a substrate having metal deposited thereon by low temperature arc vapor deposition in the manner claimed by appellants.

Appellants' position is believed to be consistent with MPEP § 2173.05(p) which states:

A product-by-process claim, which is a product claim that defines the claimed product in terms of the process by which it is made, is proper.

citing In re Luck. A copy of MPEP § 2173.05(p) is included herewith as Exhibit B. for convenience.

Secondly, the Decision appears to have overlooked the fact that the "objective evidence" referred to at the bottom of page 6 of the Decision does exist. The sentence on page 3, lines 12-14 of appellants' application:

The method can be performed at a temperature sufficiently low so as to prevent substrate degradation and deformation.

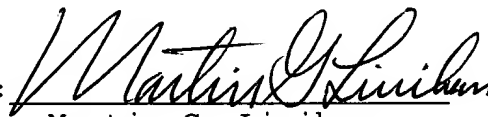
is believed to provide objective evidence supporting structural differences of appellants' claimed substrate as compared to the substrate of Evans. The significance of the fact that the substrate of appellants' invention does not require the heat treatment disclosed by Evans should be given full consideration. The substrate, oxide and applied ions of the Evans product have been heated at an elevated temperature (500 to 600°C) for a time (30 seconds to 1 minute) sufficient to incorporate the ions into the oxide layer. On the other hand, the product of appellants' invention has not been heated to such elevated temperature for such required time. It is reasonable to conclude that persons skills in the art would consider that a substrate product which has not been heated to such elevated temperature for such required time will be structurally different from one that has

been so heated for such time. This is not merely argument because the above-quoted sentence from their application is evidence that appellants recognized that their substrate, which does not require the additional heat treatment of the prior art, is structurally different in not having substrate degradation and deformation. Such structural difference coupled with the advantages of the absence of such heat treatment establishes an unobvious difference between appellants' claimed product and the product disclosed by Evans.

For the reasons set forth above, appellants respectfully request the Board to reconsider its Decision of July 21, 2004 and reverse the 35 USC 102 rejection of record and find that claims 6 and 7 define patentable subject matter over the art of record.

Respectfully submitted,

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September 21, 2004

In re LUCK AND GAINER

Court of Customs and Patent Appeals

No. 8842

Decided Apr. 26, 1973

United States Patents Quarterly Headnotes

PATENTS

[1] Patentability -- Invention -- In general (§ 51.501)

Under 35 U.S.C. 103 not only are teachings of prior art taken into consideration but also the level of ordinary skill in pertinent art.

PATENTS

[2] Claims -- Article defined by process of manufacture (§ 20.15)

Product claims may include process steps to wholly or partially define claimed product; to extent these process limitations distinguish product over prior art, they must be given same consideration as traditional product characteristics.

PATENTS

Particular patents--Lamp Coating

Luck and Gainer, Lamp Coating, claims 1 to 10 of application refused.

***524** Appeal from Board of Appeals of the Patent Office.

Application for patent of Russell M. Luck and Gordon C. Gainer, Serial No. 772,439, filed Oct. 25, 1968; Patent Office Group 160. From decision rejecting claims 1 to 10, applicants appeal. Affirmed.

W. D. PALMER (BLAIR R. STUDEBAKER of counsel) both of Pittsburgh, Pa., for appellants.

S. WM. COCHRAN (FRED E. MCKELVEY of counsel) for Commissioner of Patents.

Before MARKEY, Chief Judge, RICH, BALDWIN, and LANE, Associate Judges, and ALMOND, Senior Judge.

MARKEY, Chief Judge.

This appeal is from the decision of the Board of Appeals, adhered to on reconsideration, affirming the rejection of all the claims of appellants' application, serial No. 772,439, filed October 25, 1968, for "Lamp Coating," as unpatentable under 35 U.S.C. 103 over Pipkin [FN1] in view of Crissey et al. [FN2] and Boyd. [FN3] We affirm.

The Invention

The invention relates to an external coating for an incandescent lamp envelope (e.g. a Christmas tree lamp) which is adapted to both indoor and outdoor use and may be applied by a dip-coating process. The claims are drawn to the resultant coated glass envelope, claim 1 being representative:

1. A hollow light-transmitting lamp-bulb-shaped glass member adapted to surround a source of radiations, a coating carried on the external surface of said glass member, said coating comprising a mixture of:

(a) a polymer consisting essentially of polymethylmethacrylate having a tack point temperature of at least 170 degreesC. and an inherent viscosity of at least 0.44;

(b) from 0.1% to 10% by weight of said polymethylmethacrylate of an organofunctional silane having organic functional groups and silicon functional groups, organic functional groups of said silane reacted with said polymethylmethacrylate and silicon functional groups of said silane reacted with the surface of said glass member to couple said polymethylmethacrylate to said glass member;

(c) from 2% to 20% by weight of said polymethylmethacrylate of an additive organic substance which is at least substantially transparent, has a boiling temperature at atmospheric pressure of at least 250 degreesC., and is completely soluble in said

polymethylmethacrylate polymer within the temperature range of from -40 degreesC to 170 degreesC.; and

(d) said coating having been affixed to said glass member by applying thereon a liquid organic solvent having dissolved therein said polymer, said organofunctional silane and said additive organic substance, and said coated glass member thereafter being baked.

Dependent claims 2-9 define limitations such as specific silanes in (b), organic substances in (c), or coloring substances. Independent claim 10 is drawn to the preferred embodiment, 0.3-3% of component (b) and 5-15% of component (c).

The Prior Art

The primary reference Pipkin discloses glass lamp bulbs externally coated with a lacquer composition which may be based on methacrylate esters. The coating is applied in a mixture of organic solvents, the solvents then being removed.

Crissey et al. disclose methylmethacrylate polymer coatings, pigmented or clear, for ceramic articles, wherein 10-50% by weight (based on the weight of the polymer) of a plasticizer is included. The correlation is set forth between plasticizer and physical properties of the coating, such as cracking, crazing, flexibility and durability. A solvent is employed in application and removed by air-drying or baking.

Boyd, though directed to size compositions for glass fibers rather than coatings for light bulbs, teaches the use of a coupling agent to promote adhesion to the glass fibers of the polymeric coating, which may consist primarily of polymethylmethacrylate. Organic silanes are described as suitable agents, with the nature of organic radical not being critical "except the greater the degree of compatibility with the resinous material, the greater the coupling power between the resinous material and the glass surface." In these particular compositions the silane coupler is present in amounts of 0.8-3.5% by weight, the polymer 1-7% and the aqueous carrier 75-98%.

*525 The Rejection

The examiner considered it obvious to modify the basic coating of Pipkin by including the silane

coupler of Boyd to improve adhesion and the plasticizer of Crissey et al. to improve the physical characteristics of the coating. An affidavit submitted in an attempt to establish criticality for the upper limit of 10% for the silane in the present coating was found to be unpersuasive. Moreover, determination of optimum amounts of silane for a particular coating was considered within the realm of routine experimentation for one of ordinary skill in the art.

The process limitation set forth in part (d) of claims 1 and 10 was not regarded as significant with respect to patentability of the claimed article for two reasons. First the organic solvent vehicle was no longer present in the product per se and second, an affidavit purporting to demonstrate the difference between the present coating and a coating using an aqueous vehicle provided no actual comparisons thereof.

In sustaining, the board agreed that appellants had failed to show that the use of a somewhat smaller ratio of silane to methacrylate (Boyd using a minimum of 11.4%) was significant. On reconsideration, the observation was added that "[i]t is a routine matter to determine optimum proportions for a given silane." The correspondence of appellants' ingredient (c) to conventional plasticizers was noted, a fact made evident by a review of the specification. On the matter of the process limitation, the board stated:

* * * Insofar as the coated glass is concerned, it is immaterial whether the coupling agent was carried in water or in an organic solvent, since the carrier is no longer present in the finished article. In any event, we consider it obvious to use an organic solvent, because this is the vehicle in Pipkin and in Crissey et al.

Opinion

Appellants rest their case for unobviousness on the amount of silane coupler employed in the lamp coatings and the method of application, as set forth in the process limitation. It is urged that nowhere in the prior art is it suggested to use a silane coupler in the proportions employed by appellants or to apply a coating containing such coupler in an organic solvent. The disclosures of Boyd are said to lead only to the use of much greater amounts of the silane in an aqueous vehicle.

[1] We cannot accept appellants' contentions. The function of the silane in improving adhesion of

polymeric material to a glass substrate was known, as was the effect of the plasticizer on the physical properties of the coating. Under § 103 not only are the teachings of the prior art taken into consideration but also the level of ordinary skill in the pertinent art. Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966). In the present case, we must agree with the Patent Office that the determination of optimum amounts of the silane to achieve its recognized effect would lie within the ambit of ordinary skill in the art. The relevant affidavit of the coinventors evidences no more than routine testing to ascertain the most favorable proportions for this particular application. No critical upper limit is established. No unexpected result is demonstrated. Hence we find no basis for patentability in the amount of silane coupler.

[2] As for the method of application, it is well established that product claims may include process steps to wholly or partially define the claimed product. See In re Brown, 59 CCPA _____, 459 F.2d 531, 535, 173 USPQ 685, 688 (1972), and the cases cited therein. To the extent these process limitations distinguish the *product* over the prior art, they must be given the same consideration as traditional product characteristics. In the present case, we cannot agree with the Patent Office that the absence of the carrier in the final product renders the carrier immaterial. The method of application could well result in a difference in the coated article, regardless of the fate of the solvent.

But we do find that the Patent Office has established a prima facie case of obviousness for the product even with full weight being given to the process limitation. The Pipkin and Crissey et al. references specifically teach the use of an organic solvent. Hence such a solvent is an obvious alternative to the aqueous carrier of Boyd, no criticality having been taught by Boyd for the combination of silane and water.

Appellants' affidavit alleging that the use of an aqueous vehicle would result in an "extremely poorly adherent and unsatisfactory" coating fails to provide the rebuttal evidence necessary to overcome this prima facie case. As pointed out by the examiner, no comparative tests are presented for evaluation. Accordingly, on the record before us, the process limitation adds no distinguishable characteristic to the claimed product.

The decision of the board is *affirmed*.

FN1 U. S. 2,781,654, issued February 19, 1957.

FN2 U. S. 2,934,509, issued April 26, 1960.

FN3 U. S. 3,082,183, issued March 19, 1963.

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177 U.S.P.Q. 523

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indefinite. *Ex parte Kristensen*, 10 USPQ2d 1701 (Bd. Pat. App. & Inter. 1989).

2173.05(p) Claim Directed to Product-By-Process or Product and Process

There are many situations where claims are permissively drafted to include a reference to more than one statutory class of invention.

I. PRODUCT-BY-PROCESS.

A product-by-process claim, which is a product claim that defines the claimed product in terms of the process by which it is made, is proper. *In re Luck*, 476 F.2d 650, 177 USPQ 523 (CCPA 1973); *In re Pilkington*, 411 F.2d 1345, 162 USPQ 145 (CCPA 1969); *In re Steppan*, 394 F.2d 1013, 156 USPQ 143 (CCPA 1967). A claim to a device, apparatus, manufacture, or composition of matter may contain a reference to the process in which it is intended to be used without being objectionable under 35 U.S.C. 112, second paragraph, so long as it is clear that the claim is directed to the product and not the process.

An applicant may present claims of varying scope even if it is necessary to describe the claimed product in product-by-process terms. *Ex parte Pantzer*, 176 USPQ 141 (Bd. App. 1972).

II. PRODUCT AND PROCESS IN THE SAME CLAIM

A single claim which claims both an apparatus and the method steps of using the apparatus is indefinite under 35 U.S.C. 112, second paragraph. In *Ex parte Lyell*, 17 USPQ2d 1548 (Bd. Pat. App. & Inter. 1990), a claim directed to an automatic transmission workstand and the method steps of using it was held to be ambiguous and properly rejected under 35 U.S.C. 112, second paragraph.

Such claims should also be rejected under 35 U.S.C. 101 based on the theory that the claim is directed to neither a "process" nor a "machine," but rather embraces or overlaps two different statutory classes of invention set forth in 35 U.S.C. 101 which is drafted so as to set forth the statutory classes of invention in the alternative only. *Id.* at 1551.

2173.05(q) "Use" Claims

Attempts to claim a process without setting forth any steps involved in the process generally raises an issue of indefiniteness under 35 U.S.C. 112, second paragraph. For example, a claim which read: "A process for using monoclonal antibodies of claim 4 to isolate and purify human fibroblast interferon." was held to be indefinite because it merely recites a use without any active, positive steps delimiting how this use is actually practiced. *Ex parte Erlich*, 3 USPQ2d 1011 (Bd. Pat. App. & Inter. 1986).

Other decisions suggest that a more appropriate basis for this type of rejection is 35 U.S.C. 101. In *Ex parte Dunki*, 153 USPQ 678 (Bd. App. 1967), the Board held the following claim to be an improper definition of a process: "The use of a high carbon austenitic iron alloy having a proportion of free carbon as a vehicle brake part subject to stress by sliding friction." In *Clinical Products Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966), the district court held the following claim was definite, but that it was not a proper process claim under 35 U.S.C. 101: "The use of a sustained release therapeutic agent in the body of ephedrine absorbed upon polystyrene sulfonic acid."

Although a claim should be interpreted in light of the specification disclosure, it is generally considered improper to read limitations contained in the specification into the claims. See *In re Prater*, 415 F.2d 1393, 162 USPQ 541 (CCPA 1969) and *In re Winkhaus*, 527 F.2d 637, 188 USPQ 129 (CCPA 1975), which discuss the premise that one cannot rely on the specification to impart limitations to the claim that are not recited in the claim.

A "USE" CLAIM SHOULD BE REJECTED UNDER ALTERNATIVE GROUNDS BASED ON 35 U.S.C 101 AND 112

In view of the split of authority as discussed above, the most appropriate course of action would be to reject a "use" claim under alternative grounds based on 35 U.S.C. 101 and 112.

BOARD HELD STEP OF "UTILIZING" WAS NOT INDEFINITE

It is often difficult to draw a fine line between what is permissible, and what is objectionable from